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## NESTING HABITS OF BIRDS IN MISSISSIPPI.

BY CHARLES R. STOCKARD.

AN ATTEMPT is made in the following article to condense and summarize, and as nearly as possible to bring out the most interesting facts noted while collecting for several years in various parts of Mississippi. It is evident to all readers that in arranging data of this kind some of the habits and customs of birds which are well known to most observers must occasionally be repeated. The nesting records of birds in one section of the country are not always strikingly different from those of another, particularly for the same species. But the manner of nesting does differ slightly in many and very strikingly in a few cases. In those localities where particular kinds of material and certain peculiar conditions predominate the method of nest building will differ widely from that which is followed in sections where such conditions do not prevail; this fact is shown clearly in many instances cited below. One observing the nesting habits of birds may at times be impressed by the constant fixedness of style followed, and then again the same observer will be surprised by the great diversity in nesting habits evinced by a single species.

My intention has been to arrange the data below so that they shall clearly and briefly show the facts regarding the usual nesting sites selected by different species, as well as to indicate the season during which each species deposits its eggs. Yet in many cases birds were observed to deviate markedly from the rule in their selection of nesting sites; such instances have been particularly enumerated and emphasized, as they appear to me of especial interest in showing on the one hand a faculty apparently similar to discretion in the choice of nesting places, while as evidently on the other hand some cases illustrate the most absurd stupidity. The ordinary manner of nest construction will not be given in detail and only in remarkable cases will most of the particulars be entered into. I have deemed it only necessary in most instances to give the extreme dates in any season on which the eggs of a species were recorded, because the notes extend over a period of nine years, during which time a great number of nests of one spe-

cies may have been noted, and it is useless to string out a list of the dates on which all these nests were observed.

1. *Podilymbus podiceps*. **PIED-BILLED GREBE.**—These birds are seen in Mississippi every month of the year, and often in considerable numbers. Many careful searches were made for their nests but all proved unsuccessful, though I am confident that they nest in the State.

2. *Sterna maxima*. **ROYAL TERN.**—This beautiful large tern is to be found nesting abundantly on the small islands to the south of Mississippi Sound. No nest is constructed, the eggs being placed on the bare sand. Sets were found consisting of two and four eggs each; those of four were very rare, only two such being observed. The earliest date on which they were taken was May 28, and the latest was June 21, 1903. There is no doubt that fresh eggs may be found during a much longer period than these dates indicate, as few trips were made to the islands. Mr. C. Delmas of Scranton has collected on the islands near that place many eggs of these birds as well as those of the Cabot's Tern.

3. *Sterna sandvicensis aculeiflvida*. **CABOT'S TERN.**—This tern is found breeding on the islands in company with the Royal Tern. In Mississippi Sound one finds many eggs of this species in the latter part of May and June. All the sets observed contained one or two eggs; never as many as three were found in a set. No nest is built, the eggs lying on the sandy ground of the island. The earliest sets were taken on May 28, 1901, almost all consisting of fresh eggs, and the latest were found June 21, 1903, most of which contained well formed embryos, and many nestlings were seen on the islands at this time.

4. *Anhinga anhinga*. **ANHINGA.**—This bird is commonly known in Mississippi as the Water Turkey. They are often noticed in autumn and winter flying in large flocks. During the breeding season they are rarely observed unless one visits some swampy wood, or better some lake that is situated in a dense timber-land. There the Anhinga will be found nesting in small colonies. Nine occupied nests was the largest group found, but usually only from three to five pairs nest about a small lake. The nest was rather loosely constructed of sticks and was very shallow, being little more than a platform, suggesting at once the architectural style so commonly employed by the herons. The Little Blue Heron was found nesting about the same lakes with the Anhingas. The earliest eggs were taken on April 21, 1901, and the latest on May 14, 1902. As the nesting localities have not been at all constantly observed, the laying season may well have wider limits. Four eggs constituted the full set in all cases noted.

5. *Ardetta exilis*. **LEAST BITTERN.**—The nest of the Least Bittern was not found, although the birds were present during the nesting season. They were always very rare, however, in the marshes in which I collected.

6. *Hydranassa tricolor ruficollis*. LOUISIANA HERON.—In the marshes of the western and southern portions of the State many of these herons were found nesting, usually in company with the Little Blue. The nests were placed near the ground in small trees or bushes and were built in the careless heron style. Four eggs constituted the complete set, and the earliest date of collecting these eggs was May 11, 1896, the latest being June 12, 1902.

7. *Florida cœrulea*. LITTLE BLUE HERON.—A very common species in many parts of the State where it was found breeding in small colonies and sometimes alone. All complete sets contained four eggs. The nests were placed from ten to thirty feet above the ground in swampy woods and small marshes. Many of these herons nested along the Tombigbee River in the eastern part of Mississippi, and they were also common on the lakes in counties bordering the Mississippi River. Their nesting season commenced about the middle of April, and the latest eggs were taken June 4, 1900.

8. *Butorides virescens*. GREEN HERON.—This bird is generally known by the odd name of "Shitepoke," a name whose probable meaning and origin will be readily understood by those acquainted with early English who have noticed a certain action of the Green Heron when suddenly leaving the ground. The Green Heron does not appear to be as partial toward wooded districts for nesting localities as the other herons of the State. They were often found nesting in small willows and bushes that grew along the edges of drain ditches passing through open pastures and fields. I have failed to find this bird nesting in company with the other herons, and rarely more than two pairs were found making their homes in any one vicinity. The sets were composed of three and four eggs each. May 5, 1895, was the earliest, and June 11, 1900, was the latest date on which complete sets were collected.

9. *Nycticorax nycticorax nævius*. BLACK-CROWNED NIGHT HERON.—The writer has not found this bird at all abundant, though he was unable to visit some of the heronries claimed to exist in the swamps bordering the Mississippi River. In a small marshy wood in the eastern part of the State, Lowndes County, several pairs of this heron were found to make their homes each year. Large water-oak trees appear to be their favorite site, and one such tree in the spring of 1897 was found to contain nine nests, only two of which were occupied at that time. Trees in this wood during the breeding season are surrounded by water about eighteen inches in depth, caused by the heavy spring rains which drain in from the neighboring fields. All sets observed consisted of four eggs. The date of the earliest set was March 21, 1895, and of the latest May 11, 1897. The nests were all placed on horizontal branches, usually a considerable distance away from the tree trunk, and on this account they were often reached with difficulty. In all cases they were mere platforms of sticks.

10. *Rallus elegans*. KING RAIL.—Only one nest of this fine rail was seen and it was placed on the ground and formed of reeds. The eggs

were well concealed by the thick mat of grass that drooped over them. This waste of reeds covered several acres along a marshy stream border and was a favorite resort for many Red-winged Blackbirds, Maryland Yellow-throats, and other marsh lovers. The above mentioned nest contained six fresh eggs on June 29, 1896.

11. *Rallus crepitans*. CLAPPER RAIL. — These birds are found laying in the brackish marshes near Scranton, Mississippi. On my only visit to these places one set of ten slightly incubated eggs was collected. The nest was on the ground, raised several inches above the surface by a heap of reeds that was piled under it. The thick growth above hid the eggs from view, and they would have been passed over but for the fact that the female was flushed from them.

12. *Porzana carolina*. SORA. — I have observed this species in Louisiana but have never seen one in Mississippi, although no doubt they occur in the marshes along the river in the northwest portion of the State.

13. *Actitis macularia*. SPOTTED SANDPIPER. — These birds were present throughout the year, more abundant in winter than in summer, but their nests were never found.

14. *Oxyechus vociferus*. KILLDEER. — This plover is rather abundant in all sections of the State, and at times other than the breeding season will be found feeding in small flocks. They nest throughout Mississippi, always on the ground and, in the large number of cases observed, in open fields and pastures. The eggs are never hidden in grass or weeds but are placed in slight depressions on the bare ground or on a short grass turf. The saucer-like depression of a nest has scattered in it bits of shells, small pebbles, short pieces of weeds or sticks, and often small bits of crayfish armor. This rubbish is never arranged so as to form a real nest since only a few bits of it are scattered in the depression and can apparently serve no purpose whatever except to suggest to the observer that the Killdeer has a slight nest-building instinct either in an incipient or a rudimentary condition. The earliest set was taken on April 17, 1897, and the latest June 6, 1900. All full sets contained four eggs. Whenever the female is flushed from her nest she pretends to be unable to fly and staggers off in a wounded manner fluttering along the ground. This action is evidently intended to allure the intruder into a chase and thus draw him away from her nest.

15. *Colinus virginianus*. BOB-WHITE. — The Bob-white is still abundant, though becoming scarcer each year, at the hand of the sportsman. In fields of sedge grass or oats many pairs will often nest very close together. June, 1895, I found in a thirty acre field of sedge grass sixteen nests of the Bob-white, all containing large sets, ranging from twelve to twenty-two eggs, and the total number of eggs in this field must have been about three hundred. As the eggs were not taken the exact total was not known. In 1897 a ten acre oat field contained six nests, but in the last several years I have not observed more than three or four nests in one field and usually only one was found. The earliest complete set was

seen June 3, 1896, and the latest fresh eggs on June 29, 1900. The nest was almost invariably placed at the base of a clump of sedge grass, oat stalks, or a small shrub; it is usually composed of long grass blades and well arched over so that the eggs are only visible from the direction toward which the entrance faces, except in some cases where the roof is poorly made. In large sets the eggs often roll out at the front and sides of the nest so that the bird has difficulty in keeping them all within the nest basin.

16. *Meleagris gallopavo silvestris*. WILD TURKEY.—The Wild Turkey is still rather common in some parts of Mississippi, chiefly in large deep woods. One may often see them in small droves during the autumn and winter. The nests are rarely found, only two being observed by the writer, and in one of these cases I was conducted to the place. The sets consisted of eight and eleven eggs, slightly incubated in both instances. The first eggs were found May 14, 1895, in Lowndes County, and the second were seen on May 26, 1902, in Adams County. The nests were well concealed in thick weeds and arched over by low bushes and vines near the edge of dense woods. There was a definite path of entrance through the weeds formed by the birds in both cases. The eggs were placed on a few leaves and straws irregularly raked together, forming at best a very droll structure.

The sites selected by domesticated turkeys where they run on large and wooded ranges are very similar to these, and, excepting the fact that the area is a little more limited, their nests are just as difficult to discover. They go in under dense bushes and vines and almost completely hide their eggs, and any one who has attempted to find them can appreciate fully the masterly manner in which they are hidden.

17. *Zenaidura macroura*. MOURNING DOVE.—This species is extremely common and in fall and winter they are seen collecting in large numbers. Late in summer they begin roosting in company and many hundred come about sunset to their chosen place for the night. During this season they are shot in large numbers while flying to the hedge or small wood that has been selected as a roosting place.

Doves often nested in small colonies. In a clump of about fifteen young pine trees I once found nine nests, and in an orange hedge about one half mile long twelve nests were located. But most doves nest singly, or with the nests too far apart to suggest any gregarious nesting habit. The nest is scarcely more than a mere platform of sticks, and the eggs are often visible through the floor on account of its loose arrangement. In only one instance a nest was found placed directly on the ground; it was constructed of small sticks and grass roughly arranged and set in a slight depression. The earliest nest was found May 1, 1900, and the latest June 19, 1902. Two eggs always composed the set. The female of this species also leaves her nest in a wounded fashion. She drops in a semi-helpless manner from the limb on which the nest is placed, and flutters along on the ground as if struggling desperately to

escape the intruder. All doves are not given to this trick as some fly swiftly from the nest tree without any attempt to cajole the collector. I made special observations to ascertain whether or not there was any relation between the action of the bird on leaving the nest and the condition of the eggs or young. My results were entirely negative; some birds were seen to perform in a frantic manner after leaving perfectly fresh eggs, while others would fly in an ordinary way from a nest containing young. The actions seemed only dependent upon the feelings or nature of the mother.

18. *Cathartes aura*. TURKEY VULTURE. — Only five nests of this vulture were observed, the earliest on March 21, 1898, and the latest fresh eggs on April 25, 1902. The breeding places selected were either the hollows of fallen logs or the hollows in large stumps. A pair will continue to use the same nest for many consecutive seasons even though their eggs were taken during the previous year. (For fuller details of nesting habits of Vultures see Stockard, 'Nesting Habits of Woodpeckers and Vultures in Mississippi.' Auk, Vol. XXI, No. 4.)

19. *Catharista urubu*. BLACK VULTURE. — The earliest set from this species was taken on March 11, 1902, but a set was collected on March 16, 1901, that had been incubated for about three weeks; thus it was probably laid as early as February 23. April 19, 1902, the latest set was found, which was the second set of that season for the same pair, and as far as I am aware this is the only case recorded of two sets within one season from the Black Vulture.

20. *Accipiter cooperii*. COOPER'S HAWK. — A very common hawk in Mississippi, where it is rather retiring in its nesting habits, usually selecting a deep wood in which to rear its brood. The eleven nests observed were all located high up in oak or hickory trees which usually stood more than a quarter of a mile within the wood. The nests were built early in the year, generally about the last of February, and were at this time fully exposed to view from all sides, since the nest trees had not yet put forth their leaves. But about the time the young had hatched, late March or early April, the foliage had become sufficiently dense to almost completely conceal the nest. I have never known this hawk to use the same nest for a second season, or to use any other old nest, but all observed built new nests each year. The numbers of eggs composing sets were three and four. The earliest set was found on March 2, 1895, and the latest on April 5, 1899. Their laying season reaches its maximum about the middle of March.

21. *Buteo borealis*. RED-TAILED HAWK. — This hawk was found in all the farming districts of the State, and seems to remain almost constantly in any locality that it may choose for a hunting ground. A certain pair can be observed almost at any time within their small domain, and they apparently retain this as a home for many years. When one Red-tail's nest is found in a wood the observer may feel quite certain that similar nests will be constructed near this one for several seasons to

follow, even though their eggs are removed each year. But I have failed to note them using the same nest for more than a single season; new nests were always built each year. Their homes were made in more or less dense timber-lands, and at times in the depth of heavy swampy woods, never in open fields and pastures where the Broad-winged Hawk so often makes its nest. Large oak and hickory trees were the favorite sites selected by *borealis* for nesting. The bulky nest was well made of sticks, leaves, bark, and moss, and lined with fibrous bark, moss, and feathers; it was placed in a main trunk crotch or in a crotch of one of the large oblique branches. All sets contained only two eggs each. The maximum laying time was about the middle of March; the earliest set seen was March 3, 1898, and the latest eggs were found April 24, 1896. This hawk is much detested by farmers and when its nest is found it is fired into with shotguns, thus destroying the brood.

22. *Buteo lineatus*. RED-SHOULDERED HAWK.—The Red-shouldered is strikingly similar in nesting habits to the Red-tailed, and was, I believe, the more abundant of the two species in the State. Its nests were also placed in large oak and hickory trees, usually in dense woods but sometimes in thickly grown brakes. The writer has observed many nests of this species, but must also state that in no case have they been found using the same nest for more than one season. They, also, like *borealis*, seem partial to a particular wood as a nesting locality after it has once been chosen. The sets contained only two eggs. The time of principal laying seemed somewhat later than the middle of March. March 6, 1896, was the earliest nest found to contain eggs, and April 18, 1900, a set of comparatively fresh eggs were taken.

23. *Buteo platypterus*. BROAD-WINGED HAWK.—Although I have observed only one pair of these hawks while nesting the case proved very interesting. Through an open pasture, bordered on two sides by rather thick woods, ran a small stream only a few feet wide with a line of large cotton-wood trees along its course. On entering this pasture April 4, 1898, a hawk's nest was seen in one of the cotton-wood trees which was at this date in rather scanty foliage. To convey some idea of how completely exposed this large nest was, it may be stated that it was seen for the first time and recognized to be a hawk's nest from a distance of at least one half mile. It contained a set of two eggs. Situated in another one of the cotton-wood trees, about fifty yards distant, was a similar nest, probably of the previous season. On April 13, 1899, in the same line of trees and about two hundred yards distant from the 1898 nest, was a new nest containing two eggs. Thus for three seasons apparently the same pair had used this line of trees as nesting sites. The pair of hawks could be seen circling about the pasture almost any day of the year. In 1900 I again attempted to locate their nest but failed; the cotton-woods were deserted and the birds were not to be found.

24. *Haliaeetus leucocephalus*. BALD EAGLE.—This bird is rather common in the western portion of Mississippi along the river. I have



never seen its nest in the State, but it is said to breed year after year in the tall swamps of the river counties. There is a cypress brake bordering a lake shore in Catahoula Parish, Louisiana, where a pair of Bald Eagles rear their brood each year. The same nest is used season after season and is situated far up in the topmost branches of a huge cypress tree. This brake is about twenty-five miles from the Mississippi River, west of Natchez, Mississippi.

25. *Falco sparverius*. AMERICAN SPARROW HAWK. — The Sparrow Hawk was rather abundant in towns and villages as well as through the country districts. I found them in Adams County nesting in a manner almost social or colonial. In a newly cleared field there were many old stumps of deadened trees, some of which were very tall, and many pairs of this little hawk were nesting in these stumps. Some were in natural cavities and others in the deserted burrows of Pileated and other woodpeckers. On March 18, 1901, four hollows in this 'deadening' contained four eggs each; no nests were built in the hollows. On April 2, 1902, three other sets of four were found in the same locality. Many more pairs nested here, but most of the dead trees were impossible to climb without danger; thus few nests were observed. This clearing was about one mile long and half a mile wide.

26. *Syrnium varium*. BARRED OWL. — This is the common large owl of the State, and almost every wood, large or small, has its Barred Owls. On passing along almost any country road after sunset the hoot of this owl is heard, and where the road leads through the wood it is not at all uncommon to find one or two of them perched on some lower branch of a large tree. Then the owl will incline its body forward and peer at the passer-by in a most amusing fashion, stretching and twisting its neck and bobbing its head up and down in a remarkable way.

The eggs are laid in large hollows of trees, which are usually located in thick woods. No nest is made in the cavity, the two eggs lying directly on the soft floor of decayed wood. A pair was observed to occupy the same hollow for four years, and it was stated that the owls had reared their young in this place for many seasons before. All sets consisted of only two eggs. They are rather early layers, a set being seen on February 2, 1903, in Adams County, and another on February 18, 1895, in the east central part of the State, while the latest eggs were found on March 11, 1898; at all later dates the nests contained young. One nest was found to contain young about one week old at the early date of February 28, 1903, so these eggs were probably laid in the month of January, although not knowing the period of incubation for this bird I am unable to give a definite calculation.

The young were easily reared and fed on almost any kind of meat, being especially partial to small fish and the common crayfish. But they finally, after being fed on other diet, took a marked dislike for beef and would often go hungry rather than eat it. I reared a fine pair of these birds in 1903, and after they became able to fly and were set at liberty

they returned each day about sunset to their familiar feeding shelf and cried for food; after being gorged they flew away again to the near-by wood. They continued this habit for about one month after being liberated; I then left this locality and so was unable to observe them longer.

27. *Megascops asio*. SCREECH OWL. — The Screech Owl is abundantly distributed over all parts of Mississippi. Its shivering screechy cry is commonly heard around the farmhouses at night. This owl will also nest year after year in the same hollow. They usually select a small cavity such as an old Flicker's burrow or natural cavity and in this they build a shabby nest of small sticks, but in two instances observed the eggs have been found lying on the soft chips in the bottom of woodpeckers' burrows with no attempt at a nest. One pair was found nesting in a box that had been prepared for Purple Martins. The sets were all rather small in comparison with those reported from other parts; never more than four and usually three eggs composed them. The earliest set was taken March 14, 1903, and the latest on May 3, 1902, well incubated and placed in the martin box mentioned above. Both red and gray types of this owl were common and the two types mate together about as often as they mate straight. The broods are commonly mixed, some individuals being red and others gray. This might prove interesting material for the study of inheritance.

28. *Bubo virginianus*. GREAT HORNED OWL. — Occasional individuals of *virginianus* are seen throughout the State. They probably nest also, as they are found at all seasons, but I have never been so fortunate as to locate their breeding places.

29. *Coccyzus americanus*. YELLOW-BILLED CUCKOO. — This species is very common during spring and summer. It selects the wooded borders of streams and young groves as nesting localities. The nest is built much on the same general plan as that of the Mourning Dove, being so thin and loosely constructed that the eggs are usually visible through its floor. It is placed at a moderate height, ranging from eight to twenty feet above the ground, and in almost all cases rests upon a horizontal branch some distance from the trunk of the tree. Though sets of as many as six eggs are reported from other States, I have never seen more than two eggs in a nest. The earliest nesting date noted was May 5, 1896, and the latest was June 21, 1899. They are late layers and apparently have a long breeding season.

30. *Ceryle alcyon*. BELTED KINGFISHER. — This is a familiar fisherman in almost all of the lakes and streams. Its burrows are seen in the perpendicular banks of nearly all creeks and rivers, and they are also noted some distance from water in the sandy cliffs of hills. The tunnel-like burrow often extends back as far as eight feet, and rarely less than five. It is an almost cylindrical tunnel until the back portion is reached, where it flares out, forming a considerable chamber, ten or twelve inches across and with its top and floor scooped so as to give concave surfaces. These burrows are usually straight but occasionally bend at an angle,

possibly to avoid some obstruction in the line; they are always dug by the birds, and in all those observed were occupied only for a single season. This construction is very similar to that made by the Bank Swallow but is rather larger and extends further back. The two species were often seen building their burrows close together in the same bank. The Kingfisher builds no nest in its tunnel, although the floor of the back chamber is often strewn with pieces of crayfish shells that have been ejected from the stomach of the old birds. The Bank Swallow, on the other hand, places a rather neat nest of straws in the back of its burrow. The Kingfisher laid in all cases six eggs, and the earliest were seen on April 28, 1897, the latest on June 7, 1895. May is their chief month for laying. They often dig many shallow burrows in the same bank before striking the permanent nest cavity, just as woodpeckers do on their nest tree. After finding many Kingfisher burrows, some new and many old, I noticed that in the case of all occupied nests there was a slight ridge running along the middle line of the tunnel floor, which was due to the fact that the feet of the birds pressed down paths along the sides of the floor, thus leaving the middle ridge untrampled as they passed back and forth through the tunnel. Nearly all traces of this delicate ridge were obliterated in the old tunnels, particularly near their entrances, so that they were readily distinguishable from those occupied.

31. *Campephilus principalis*. IVORY-BILLED WOODPECKER. — I have never seen this woodpecker in Mississippi, although many claim to observe them in the western part of the State in the dense river swamps.

32. *Dryobates pubescens*. DOWNY WOODPECKER. — The earliest set of this species was taken April 20, 1900, and the latest on May 18, 1902. For fuller details of the nesting habits of Woodpeckers in Mississippi, see Auk, Vol. XXI, No. 4. In this article I shall give only the extreme dates on which sets were taken.

33. *Ceophlœus pileatus*. PILEATED WOODPECKER. — The earliest eggs were found April 1, 1901, and the latest set was seen on May 8, 1903.

34. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER. — May 12, 1901, was the date of the earliest set seen, and fresh eggs were found as late as June 14.

35. *Centurus carolinus*. RED-BELLIED WOODPECKER. — The earliest set was found on April 24, 1900, and the latest on June 2, 1900. These two extreme sets were both from the same pair, the last mentioned being the fourth set of the season. These birds have a remarkable capacity for continuous laying.

36. *Colaptes auratus*. FLICKER. — The earliest and latest dates on which eggs of this species were collected were April 12, 1896 and June 4, 1899.

37. *Antrostomus carolinensis*. CHUCK-WILL'S-WIDOW. — The call of the Chuck-will's-widow is a familiar sound throughout Mississippi, but to observe the bird is not a common pleasure, and to find its eggs is a difficult proposition indeed. The birds are migratory and reach home

rather late in spring, most of them about the middle or last of April. But since their brooding is such a simple process they begin laying soon after their arrival. No nest whatever is made, and the eggs that I found were placed on the bare ground in one case, and in three others on the pine needles that happened to be scattered upon the ground near the edge of thick pine woods. The pine straws showed no arrangement at all, so that after the eggs were taken up one could detect no difference between the spot on which they had been deposited and the surrounding straw. The earliest set was found on May 3, 1902, and the latest on May 23, 1903. The bird in two instances left her eggs in a wounded fashion, fluttering along the ground as if unable to arise and fly, evidently to call the intruder's attention from her eggs, and should he watch her actions very closely he finds trouble in locating the spot from which she arose, as the eggs are about as difficult to detect while lying on the ground as one could well imagine. In another case the bird arose and flew directly into the dense wood and was not again seen.

38. *Chordeiles virginianus*. NIGHTHAWK. — This bird is known in Mississippi as the 'Bull-bat' on account of the roaring noise it produces while swooping with its large mouth open to capture insects. About dusk during the summer months large numbers of these birds begin to circle over pastures and open fields scooping insects on the dart, and at this time they are foolishly slaughtered by pseudo-sportsmen who shoot them merely to watch the bird's graceful fall or to improve their skill as marksmen. Thus this useful insect destroyer is fast becoming less abundant.

The Nighthawk deposits its two eggs on the ground with no attempt at clearing or sweeping off a place for them. The mottled color of the eggs so closely resembles the earth on which they lay that there is more chance than skill in seeing them. One is very fortunate to find as many as two sets within the same season. The earliest set was found on May 5, 1899, and the latest was taken June 2, 1902.

39. *Chætura pelagica*. CHIMNEY SWIFT. — As in most other States the 'Chimney Swallow' is extremely common. After the breeding season is over they may be seen in immense droves of many hundred individuals circling about before going into some large unused chimney for the night. The chimneys of vacant houses as well as the unused ones of occupied dwellings form the familiar nesting places of these birds. The many sets observed contained either four or five eggs, usually four, and were taken as early in the season as May 15, and as late as June 17.

40. *Trochilus colubris*. RUBY-THROATED HUMMINGBIRD. — This beautiful little bird was common in all flower-gardens and orchards as well as in the meadows and fields. Owing to the minute size of their nest it is rarely found. In two cases I located vicinities in which I felt sure nests were situated and then carefully watched the female for some time until at last she buzzed to a limb and perched close to the nest. It seems that she is apt to thus expose the presence of her home if one will

patiently watch for thirty minutes or an hour. The sets of two eggs were in the usual delicate nests of down with outer coats of lichens, and both were placed upon horizontal branches, one twenty feet from the ground and the other about forty. The collecting dates were May 14, 1896, and May 9, 1899.

41. *Tyrannus tyrannus*. KINGBIRD. — The commonly termed "Bee-martin" is found nesting in fields, pastures, and along road sides and streams. Some nests could be reached while standing on the ground, but others were placed in the topmost boughs of oaks and gums. This bird is very noisy around its nest, and one with little experience can spot a nest tree by the actions of the birds some time before he is near enough to see the nest itself. It is usually conspicuously placed in the crotch of a medium sized horizontal branch. The sets consisted of three and four eggs. Kingbirds are comparatively late nesting in this locality, the earliest set being seen on May 10, 1896, and the latest on June 13, 1900.

42. *Myiarchus crinitus*. CRESTED FLYCATCHER. — The Crested Flycatcher is called in Mississippi by the misnomer Kingbird. It nests throughout the State, in every variety of hollow in tree or post as well as in martin boxes. The natural cavities of china trees seem to be their favorite sites. The nest is built on the bottom of the hollow and is rather elaborate, being composed of straw, fibrous tree bark, feathers, moss, and usually a cast off snake's skin, but several nests were seen without this supposedly indispensable component. The sets contained from four to six eggs, the earliest being taken on April 23, 1902, and the latest May 27, 1899.

One is struck by the profuse markings of this egg when he remembers how thoroughly it is concealed from ordinary view in the depths of a hollow. It forms the most *marked* exception to the general rule, that eggs laid in dark cavities are white. But when we recall the fact that the most typical hollow layers build no nest and usually make their own burrow, we are then led to believe, from the well made nest and highly mottled egg of this species, that the habit of laying in hollows is a comparatively recent acquirement. The random selection of cavities made by these birds seems to point toward the same conclusion.

43. *Contopus virens*. WOOD PEWEE. — This modest and attractive little bird is found nesting in the edges of most small woods and brakes as well as in the groves near houses. The nests are placed on horizontal branches at various distances above the ground, but always more than fifteen feet. This nest is a very shallow affair but neatly rounded and covered on the outer side with lichens and thus resembles a natural knot of the limb. All sets seen consisted of three eggs, and the earliest laying date for this species was May 17, 1897, the latest June 19, 1902.

44. *Empidonax virescens*. GREEN-CRESTED FLYCATCHER. — A species with most retiring habits. The nest may be found and removed without the birds having made their appearance or the slightest sound. Those nests observed were all in rather dense woods and in perfectly unfre-

quented places. Several nests were found in the east central part of the State, which were loosely built between the prongs of small forked branches; the sides were plaited about these prongs, and the nest bottom was so thin that the eggs could be counted through it. The nests were also very flat so that care was necessary in collecting them to prevent the eggs from rolling out over the sides. Two nests taken in Adams County were very interestingly constructed, being composed entirely of Spanish moss woven between the prongs of small elm forks. A surplus of moss was used so that long beards or streamers of it hung down for a length of eighteen inches below the actual nest. This arrangement gave the exact appearance of ordinary bunches of this gray moss hanging from the branches. Both nests would have been passed unnoticed but for the fact that the birds flew off as I passed under the limbs. The extreme dates for noting eggs of this species were May 4, 1898, and June 19, 1901.

45. *Cyanocitta cristata*. BLUE JAY.—With the exception of the English Sparrow the Blue Jay is probably the most abundant bird in the State. The shade trees bordering the streets of towns, the groves near dwelling houses, trees along road sides, orchards, pastures, and pine woods as well as thick woods, are nesting localities of this bird. One nest was placed in a tree crotch not more than six feet from a bed-room window, thus one might look out on the bird as she sat calmly upon her eggs, and later she was not noticeably nervous while feeding her nestlings before an audience of several persons who observed the performance from the window.

(*To be concluded.*)

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## NESTING OF THE GOLDEN EAGLE IN MONTANA.

BY E. S. CAMERON.

### *Plates II-VI.*

FOR two years (1903-04) a pair of Golden Eagles (*Aquila chrysaetos*) have nested near my ranch on the north side of the Yellowstone, opposite Fallon on the Northern Pacific Railroad; and during 1904 I was able to keep the birds under constant observation. The nest was first discovered at the end of June, 1903, owing to the boldness of one of the parents which carried away a lamb in presence of an indignant shepherd who followed to ascertain the fate of his charge. He thus found the eyrie, along with two fully fledged eaglets; and succeeded in ruthlessly